National Women & Infants Health Programme

QUICK SUMMARY DOCUMENT

First Trimester Miscarriage

This QSD is a resource for all clinicians working in healthcare in Ireland who are involved in the care of women with suspected and confirmed miscarriage as well as promoting a standardised approach nationally across all maternity units/hospitals considering organisation of care, standardised management options in addition to supportive care and counselling.

Following a comprehensive literature review a number of evidence-based recommendations for management of First Trimester Miscarriage were agreed upon.

Key Recommendations

Assessment of Miscarriage

1. Women (with a positive urinary pregnancy test) who present with heavy bleeding, soaking 4 or more pads over 1 hour, and/or severe pain require urgent medical assessment in secondary care. *(Best Practice)*
2. Women who are considered clinically stable after appropriate medical assessment are suitable for outpatient follow-up in the early pregnancy unit and should be advised to re-attend secondary care if new and/or red flag symptoms (excessive bleeding, severe lower abdominal pain, new onset unilateral pain, shoulder tip pain, presyncope and malodourous vaginal discharge) develop. *(Best Practice)*
3. If a woman who is less than 6 weeks gestation presents with bleeding but no pain and has no risk factors for ectopic pregnancy (i.e. previous ectopic pregnancy), these women should be advised to repeat a high sensitivity urine pregnancy test (HSUPT) after 2 weeks. A positive test result, persistent bleeding and/or development of pain warrants referral to the local early pregnancy unit or out-of-hours emergency services if indicated. *(Best Practice)*
4. Ultrasound performed by appropriately qualified clinicians, who have completed accredited ultrasound training, is the primary modality to diagnose miscarriage. *(Best Practice)*
5. Transvaginal ultrasound is the recommended imaging modality for diagnosing miscarriage in women who are less than 8 weeks gestation. *(Grade 1C)*
6. When an intrauterine pregnancy is visualised on ultrasound, serum β-hCG has no role in predicting early pregnancy viability and should not be utilised to diagnose miscarriage. *(Grade 1C)*
7. If a pregnancy location is not visualised on ultrasound in a woman who reports heavy vaginal bleeding and/or pain, serial serum β-hCG should be measured and further guidance should be sought from the National Clinical Practice Guideline: The Diagnosis and Management of Ectopic Pregnancy. *(Best Practice)*
8. A systematic approach should be utilised when performing both transvaginal and transabdominal ultrasound scans, including visualisation of relevant anatomical structures in the sagittal and transverse planes in addition to the adnexa. *(Best Practice)*

Diagnosis of Miscarriage

9. An ultrasound diagnosis of missed miscarriage is confirmed when no cardiac activity is identified in a fetal pole with a crown-rump length ≥7 mm on transvaginal ultrasound or >8 mm on transabdominal ultrasound. If a fetal pole and/or yolk sac is not visualised, a mean gestational sac diameter measuring ≥25 mm on both transvaginal and transabdominal ultrasound is diagnostic of a missed miscarriage. *(Grade 1B)*
10. If on transvaginal ultrasound, the mean gestational sac diameter is <25 mm with no yolk sac or fetal pole or if the fetal pole is measuring <7 mm with no cardiac activity identified within 30 seconds, then a diagnosis of pregnancy of uncertain viability may be made. A repeat ultrasound assessment is recommended after 7 to 10 days to clarify the diagnosis. *(Grade 1B)*

11. The presence of intrauterine retained pregnancy tissue with or without increased endometrial thickness (i.e. ≥15 mm) and no visualisation of an adnexal mass on ultrasound is diagnostic of an incomplete miscarriage. *(Grade 1B)*
12. The widest endometrial thickness diameter measuring <15 mm with prior ultrasonographic evidence of an intrauterine gestational sac or retained pregnancy tissue before bleeding onset is diagnostic of a complete miscarriage. *(Grade 1C)*
13. In the absence of a previous ultrasound scan confirming an intrauterine pregnancy, women with ultrasound features suggestive of complete miscarriage should be managed as a pregnancy of unknown location. Clinicians should refer to the National Clinical Practice Guideline: The Diagnosis and Management of Ectopic Pregnancy for further management recommendations. *(Best Practice)*

Management of Miscarriage

14. Conservative or medical management in the absence of excessive bleeding, infection, and haemodynamic instability are appropriate management options for miscarriage. *(Best Practice)*
15. For medical management of missed miscarriage, we recommend pre-treatment with mifepristone 24 to 48 hours before misoprostol administration. *(Grade 1A)*
16. Misoprostol should be administered buccally, rather than orally, to improve treatment efficacy for medical management of miscarriage. *(Grade 1B)*
17. If vaginal bleeding has not started 48 hours after taking misoprostol, women should be advised to contact their local early pregnancy unit. A second dose of misoprostol may need to be administered. *(Best Practice)*
18. For inpatient medical management, further doses of misoprostol may be considered if no bleeding is observed 3 to 4 hours after taking 800mcg of misoprostol. A total of 4 further doses of 400mcg of misoprostol may be administered buccally every 3 to 4 hours until pregnancy tissue passes. *(Grade 1B)*
19. Surgical management for miscarriage should be performed using either manual vacuum aspiration (MVA) or electric vacuum aspiration (EVA) and this management option should be offered to women exceeding 9 weeks gestation on ultrasound or those with a gestational sac diameter measuring > 30 mm. *(Grade 2B)*
20. A follow-up ultrasound scan is recommended 2 weeks after cessation of bleeding in women who undergo conservative management. Women who experience persistently heavy/abnormal vaginal bleeding during this 2-week period warrant immediate medical review and ultrasound assessment. *(Best Practice)*
21. For women who undergo medical management, a HSUPT or ultrasound completed 3 weeks after initiating medical management is recommended. *(Best Practice)*
22. If a woman opts to complete a HSUPT and this test is positive, or prolonged bleeding with a negative HSUPT is reported, women should be advised to contact their local early pregnancy unit for individualised care. *(Best Practice)*
23. In the management of incomplete miscarriage, conservative, medical and surgery are appropriate management options. *(Grade 1B)*
24. We recommend 800mcg of misoprostol, to be administered buccally for medical management of incomplete miscarriage. *(Grade 1B)*
25. Ultrasound should be offered 2 weeks after cessation of bleeding in women who opt for conservative management for incomplete miscarriage. *(Best Practice)*
26. To ensure miscarriage is complete, follow-up with either a HSUPT or ultrasound 3 weeks after initiating medical management for incomplete miscarriage is recommended. *(Best Practice)*
27. Delayed or protracted vaginal bleeding as a result of incomplete miscarriage or inevitable miscarriage warrants urgent medical assessment in secondary care. *(Best Practice)*
28. Women who experience delayed or protracted bleeding and present with signs of haemodynamic instability should be resuscitated and assessed by senior clinicians before planning definitive management. *(Best Practice)*

29. All non-sensitised women who are rhesus negative should receive anti-D immunoglobulin prophylaxis if having surgical management for first trimester miscarriage. *(Grade 2C)*

Histopathological Examination

30. Histopathological Examination is usually performed where pregnancy tissue is available to exclude gestational trophoblastic disease. *(Best Practice)*
31. Women should be informed of the procedures and hospital policies that relate to management of pregnancy tissue, including options around burial of fetal tissue and/or return of pregnancy tissue. Specifically, women should be informed that often small quantities of pregnancy tissue are obtained, and it may not be possible to identify fetal tissue. *(Best Practice)*
32. For women who experience miscarriage in the community and present to secondary care with the pregnancy tissue, each maternity unit/hospital should have an established care pathway for pregnancy tissue, including discussion of histological examination and management of fetal tissue. Relevant healthcare professionals should be aware of these procedures. *(Best Practice)*
33. There is a need to review practice nationally in relation to the management of early pregnancy tissue, including its ultimate disposal, with a view to providing guidance on best practice. *(Best Practice)*

Complications of Miscarriage

34. Infection and retained pregnancy tissue are intermediate complications of delayed or unsuccessful management of miscarriage, while chronic endometritis often presents later. Intrauterine adhesions are a rare complication from excessive and/or repetitive uterine curettage. *(Grade 2C)*

Bereavement and Supportive Care

35. Healthcare professionals should be aware of the psychological sequalae associated with miscarriage which can affect women/couples and may contribute to long-term mental health morbidity if the necessary supports are not provided. Signposting to appropriate supports including psychological counselling, bereavement services and informal supportive resources may be indicated. *(Best Practice)*
36. Standards described in the National Standards for Bereavement Care following Pregnancy Loss and Perinatal Death relating to sensitive communication, compassionate care, dignity and respect should be followed when caring for women/couples who have experienced miscarriage. *(Best Practice)*

Follow-up and Future Pregnancy Planning

37. Follow-up care after miscarriage should be tailored to each individual woman specifically relating to bereavement and psychological needs and communication of histopathological results. Written information outlining appropriate supports and follow-up plans should be provided to women/couples. *(Best Practice)*
38. Future pregnancy and family planning after miscarriage are important components of care. Women should be counselled appropriately in relation to future pregnancy planning and/or contraceptive options. *(Best Practice)*
39. For women who experience recurrent miscarriage, guidance should be sought from the National Clinical Practice Guideline: Recurrent Miscarriage for definitions, relevant investigations and management options for these women. *(Best Practice)*

Organisation and Provision of Services

40. All women who experience early pregnancy complications should be referred to a dedicated early pregnancy clinic for centralisation and coordination of care. *(Best Practice)*
41. Each early pregnancy unit should be accessible with sufficient staffing and facilities to provide appropriate clinical assessment, management and support for women/couples who experience miscarriage. *(Best Practice)*

Education

42. Healthcare professionals who care for women with early pregnancy complications should be supported through training and have access to education to fulfil their roles and responsibilities. *(Best Practice)*

43. A formal policy on staff support for those working in early pregnancy loss should be available and should outline a range of supports as described in the National Standards for Bereavement Care following Pregnancy Loss and Perinatal Death. Support options including supervision, individual debriefing, peer group support and services of a professional counsellor such as the HSE Employee Assistance Programme to mitigate burnout and fatigue. *(Best Practice)*

Algorithm

Algorithm 1: Triage and assessment of first trimester early pregnancy pain and bleeding

Initial Midwifery Triage

- Confirm gestation (date of last menstrual period)
- Positive urine pregnancy test
- Clinical assessment (vital signs)

Clinical Features/Red Flags

- Systolic blood pressure ≤ 100mmHg
- Pulse rate ≥ 99 bpm
- IMEWS triggers
- Pain
  - Right/left iliac fossa pain
  - Shoulder tip pain
- Dizziness, pre-syncope, syncope or maternal collapse
- Altered level of consciousness
- Malodorous vaginal discharge
- Any other clinical concern

If Yes to Any ▶ Escalation

▼ If no to all ▼

Blood Loss/Red Flag

Excessive bleeding (i.e. changing a pad soaked with blood clots every 15 minutes or 4 soaked pads over one hour)

If Yes to Any ▶ Escalation

▼ If no to all ▼

High Risk of Ectopic Pregnancy

- Smoking
- Pelvic inflammatory disease
- Previous ectopic pregnancy
- Assisted reproduction
- Intrauterine contraceptive device (IUCD)
- Previous tubal surgery or pathology
- Endometriosis

If Yes to Any ▶ Escalation

▼ If no to all ▼

Triage as non-urgent and requiring medical review

Await medical review in emergency room OR

Consider if direct referral to the early pregnancy unit is appropriate with safety netting

Consider timing as per relevant clinical risk factors.

Provide relevant information leaflet and emergency contact information

Escalation

Inform Senior Staff

(Medical and Midwifery)

- Transfer to resuscitation area
- Intravenous access
- Bloods
- Full blood count
- Group and save +/- Cross match
- IV Fluids
- Analgesia
- Clarify allergies

Algorithm 2: Assessment and management of first trimester bleeding

History

- Date of last menstrual period
- Duration and quantity of bleeding
- Has any pregnancy tissue passed?
- Is there abdominal pain and/or foul discharge?
- Is there any associated symptom
  - e.g. shoulder tip pain, pain out of proportion to bleeding, syncope?
- Regular medication and/or relevant medical history
- Previous uterine or abdominal surgery?
- Examination
- Vital signs
- Abdominal examination
- Speculum/bimanual pelvic examination

Haemodynamically compromised woman

- Call for help – Senior Obstetrician/Midwife/ Anaesthetist
- Resuscitation
  - Airway
  - Breathing
  - Circulation
- 2x 14G cannulas
- Full blood count, urea and electrolytes, coagulation profile fibrinogen, group and save and cross-match
- Point of care arterial and/or venous sample
- High flow oxygen
- Intravenous fluids
- Urinary catheter, monitor output hourly
- Consider blood products: red cells, platelets, fibrinogen, fresh frozen plasma and clotting factors

Confirm pregnancy location

- Consider previous ultrasound scan findings
- Consider performing immediate transabdominal/transvaginal ultrasound scan or if the woman is clinically stable refer to the early pregnancy unit for ultrasound scan

Ectopic pregnancy

- Refer to National Clinical Practice Guideline Diagnosis and Management of Ectopic Pregnancy

Intrauterine pregnancy visualised

Pregnancy of unknown location

- Refer to National Clinical Practice Guideline Diagnosis and Management of Ectopic Pregnancy

Intrauterine pregnancy

- Gestational sac with fetal heartbeat present or absent
- Differential diagnosis
  - Viable pregnancy
  - Pregnancy of uncertain viability
  - Missed miscarriage
  - Incomplete miscarriage

Individualise care according to clinical findings

Ongoing/incomplete miscarriage presenting with moderate to severe haemorrhage

- Full blood count (FBC), coagulation profile and fibrinogen, group and cross-match
- High vaginal swab (HVS), urine for microscopy and culture if infection suspected
- Intravenous access
- Consider surgical evacuation for retained pregnancy tissue
- Consider broad spectrum antibiotics if infection suspected
- Consider use of intravenous tranexamic acid, fibrinogen and clotting factors

Complete miscarriage

- No intrauterine gestational sac visualised
- Previous departmental ultrasound scan confirming intrauterine pregnancy
- If miscarriage is considered complete and the woman remains clinically well with a stable haemoglobin, no further follow-up (i.e. high sensitivity urinary pregnancy test or ultrasound) is indicated.

In the absence of a previous ultrasound scan confirming an intrauterine pregnancy, women with ultrasound scan features suggestive of complete miscarriage should be managed as pregnancy of unknown location

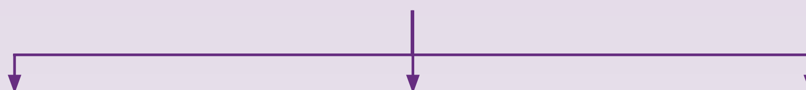
Adapted from: Queensland Clinical Guide. Early pregnancy loss. Flowchart: F22.29-2-V5-R27 http://www.health.qld.gov.au/qcg

Algorithm 3: Management of first trimester miscarriage

Miscarriage diagnosis is confirmed

Discuss management options relevant to woman's preferences and clinical indications

The Miscarriage information booklet should be provided



Conservative

Indications

- Woman's preference
- Clinically stable

Contraindications

- Haemodynamic instability
- Infection
- Suspected gestational trophoblastic disease
- Medical conditions increasing risk of haemorrhage

Complications

- Feeling faint (1-2/100)
- Heavy bleeding (1/100)
- Haemorrhage requiring blood transfusion (1/1000)
- Retained pregnancy tissue requiring further treatment (3-10/100)
- Infection (1-3/100)

Management

- Evaluate history and examination to assess suitability for conservative management
- Offer conservative management for 2 weeks.
- Women should be advised to contact their local early pregnancy unit in the following instances:
  - Passage of pregnancy tissue followed by lightening or resolution of bleeding (i.e. complete miscarriage)
  - Prolonged heavy/abnormal vaginal bleeding
- To confirm if miscarriage is complete:
  - Ultrasound should be completed 2 weeks after cessation of bleeding
  - If a woman declines ultrasound follow-up and is clinically well, a high sensitivity urinary pregnancy test should be completed 3 weeks after cessation of bleeding. If this test is positive, women should contact their local early pregnancy unit
- Persistent heavy and/or abnormal vaginal bleeding warrants immediate ultrasound follow-up

Medical

Indications

- Woman's preference
- Clinically stable
- Cytogenetic sampling as inpatient management

Contraindications

- Haemodynamic instability
- Infection
- Suspected gestational trophoblastic disease
- Medical conditions increasing risk of haemorrhage

Complications

- Feeling faint (1-2/100)
- Heavy bleeding (1/100)
- Haemorrhage requiring blood transfusion (1/1000)
- Retained pregnancy tissue requiring further treatment (7/100)
- Infection (1-3/100)
- Misoprostol side-effects (≥ 1/10 diarrhoea, ≥ 1/100 – < 1/10 nausea and vomiting, ≥ 1/1000 – < 1/100 fever)

Management

- Evaluate history and examination to assess suitability for inpatient or outpatient medical management
- Dispense mifepristone followed by misoprostol 24 to 48 (ideally 36) hours later
- If vaginal bleeding has not started 48 hours after taking misoprostol, women should contact their local early pregnancy unit. A second dose of misoprostol may need to be administered
- Follow-up (high sensitivity urine pregnancy test or ultrasound) after inpatient management is not indicated if miscarriage is confirmed complete by a healthcare professional (i.e. fetal tissue and /or pregnancy tissue are present in obtained pregnancy tissue)
- Outpatient follow-up is recommended 3 weeks after completing medical management by either high sensitivity urinary pregnancy test or ultrasound

Surgical

Indications

- Woman's preference
- Previously unsuccessful conservative or medical management
- Cytogenetic sampling

Absolute indications

- Haemodynamic instability
- Persistent excessive bleeding
- Septic miscarriage
- Suspected gestational trophoblastic disease

Complications

- Feeling faint (1-2/100 only if awake during surgery)
- Heavy bleeding (1/100)
- Haemorrhage requiring blood transfusion (1/1000)
- Retained pregnancy tissue requiring further treatment (1-3/100)
- Infection (1-3/100)
- Uterine perforation (1-4/1000)
- Cervical trauma (1/100)
- Ashermans Syndrome (1/100)
- Anaesthesia risks (<1/1000)

Management

- Evaluate history and examination to assess suitability for surgical management
- Dispense misoprostol or mifepristone for cervical priming
- Consider ultrasound during surgical evacuation
- No follow-up indicated unless retained pregnancy tissue or gestational trophoblastic disease is suspected (i.e. with high sensitivity urinary pregnancy test or ultrasound)

Adapted from: Queensland Clinical Guide. Early pregnancy loss. Flowchart: F22.29-1-V5-R27 http://www.health.qld.gov.au/qcg

Auditable standards

Audit using the key recommendations as indicators should be undertaken to identify where improvements are required and to enable changes as necessary, and to provide evidence of quality improvement initiatives.

Auditable standards for this guideline include:

1. The number of initial/new presentations to EPU compared to follow up presentations.
2. From the proportion of women who are diagnosed with miscarriage within this guideline definition, what number of these women are diagnosed with a spontaneous complete miscarriage.
3. The number of women who chose each management option: conservative management, medical management and surgical management.
4. For women who are diagnosed with missed miscarriage and chose medical management, quantify the proportion of women who receive the recommended regime (mifepristone followed by misoprostol).
5. The proportion of women who attend out of hours as an emergency to secondary care with an early pregnancy complication (i.e. bleeding, infection, generally unwell) following outpatient conservative and/or medical management.
6. The proportion of women who undergo unsuccessful management requiring further treatment (i.e. unsuccessful conservative management requiring medical or surgical management).

Recommended reading:

1. HSE nomenclature / glossary for audit www.hse.ie/eng/about/who/nqpsd/ncca/nomenclature-a-glossary-of-terms-for-clinical-audit.pdf
2. HSE National Framework for developing Policies, Procedures, Protocols and Guidelines at https://www.hse.ie/eng/about/who/qid/nationalframeworkdevelopingpolicies/
3. HSE. Clinical Practice Guideline Management of early pregnancy miscarriage. 2012. https://pregnancyandinfantloss.ie/wp-content/uploads/2019/03/CLINICAL-PRACTICE-GUIDELINE-ON-MANAGEMENT-OF-EARLY-PREGNANCY-MISCARRIAGE.pdf
4. HSE. Ultrasound diagnosis of early pregnancy miscarriage. 2010. https://www.hse.ie/eng/services/publications/clinical-strategy-and-programmes/ultrasound-diagnosis-of-early-pregnancy-miscarriage.pdf
5. ACOG Practice Bulletin No. 200 Summary: Early Pregnancy Loss. Obstet Gynecol. 2018 Nov;132 (5):1311–3. https://pubmed.ncbi.nlm.nih.gov/30157093/
6. NICE. Ectopic pregnancy and miscarriage: diagnosis and initial management. NICE; 2023. https://www.nice.org.uk/guidance/ng126
7. Ghosh J, Papadopoulou A, Devall AJ, Jeffery HC, Beeson LE, Do V, et al. Methods for managing miscarriage: a network meta-analysis. Cochrane Database of Systematic Reviews. 2021;(6). https://pubmed.ncbi.nlm.nih.gov/34061352/

Authors

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https://www.hse.ie/eng/about/who/acute-hospitals-division/woman-infants/clinical-guidelines/

https://www.rcpi.ie/faculties/obstetricians-and-gynaecologists/national-clinical-guidelines-in-obstetrics-and-gynaecology/